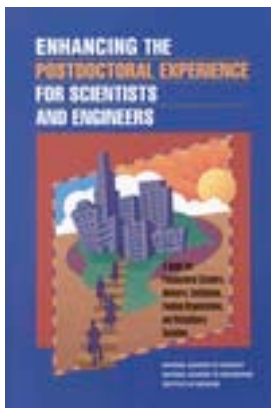


Free Executive Summary



Enhancing the Postdoctoral Experience for Scientists and Engineers: A Guide for Postdoctoral Scholars, Advisers, Institutions, Funding Organizations, and Disciplinary Societies

National Academy of Sciences, National Academy of Engineering, Institute of Medicine

ISBN: 978-0-309-06996-0, 212 pages, 6 x 9, paperback (2000)

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The concept of postdoctoral training came to science and engineering about a century ago. Since the 1960s, the performance of research in the United States has increasingly relied on these recent PhDs who work on a full-time, but on a temporary basis, to gain additional research experience in preparation for a professional research career. Such experiences are increasingly seen as central to careers in research, but for many, the postdoctoral experience falls short of expectations. Some postdocs indicate that they have not received the recognition, standing or compensation that is commensurate with their experience and skills. Is this the case? If so, how can the postdoctoral experience be enhanced for the over 40,000 individuals who hold these positions at university, government, and industry laboratories? This new book offers its assessment of the postdoctoral experience and provides principles, action points, and recommendations for enhancing that experience.

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RIGHTS, RESPONSIBILITIES, AND RESPONSIBILITY OF THE EXPERT

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute, and

Has the public education system been undermined by too much schooling in order to impose the state's will on the people? The answer is yes, and the reason is that the state has captured the state of mind of the teachers and the parents of the children of an ill society.

SAMUEL H. PERSSON Dean, School of Arts and Sciences, University of

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Medical assistance does not assume responsibility for activities supported by the grant, for project management, or for the collection, analysis, and interpretation of data. For additional information, please contact the PI.

PROFESSOR LAWRENCE STAMANT is a faculty member and Vice Deans Professor of Cancer Research at the University of Illinois at Chicago. He is also the chair of the Department of Cell Biology and Physiology at the University of Illinois at Chicago. He is also the chair of the Department of Cell Biology and Physiology at the University of Illinois at Chicago.

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[illegible]

DEBORAH D. STINE, Project Director, stine@nsl.gov, Federal Bureau of Investigation, 400 ... 170

JAMES M. CAMPBELL is senior program director, Operations Section, approximately five years, and is currently a senior advisor to the Department of Defense, Washington, D.C.

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ELIZABETH C. NOLAN is a Research Associate at the Center for Communications Programs, University of Illinois at Chicago. She has published articles on the use of virtual worlds in research and on the use of virtual worlds in research.

[illegible]

REBECCA COX, Ph.D., is an assistant professor at the University of North Carolina at Chapel Hill. She received her Ph.D. from the University of California, Berkeley, where she was a member of the Graduate Fellowship Program. Her research interests include the role of social support in health behavior change.

KEVIN POPOPP is a Senior Lecturer in the Department of Management Science and Engineering at MIT, where he is also the Director of the Center for Advanced Study in the Design of Organizations. He is also a Senior Lecturer at MIT Sloan School of Management. He is the author of *Managing the Design of Organizations* (MIT Press, 2003) and *Managing the Design of Organizations: A Systems Approach* (MIT Press, 2008). He is also the Director of the Center for Advanced Study in the Design of Organizations at MIT.

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Biography

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THE NATIONAL ACADEMIES

RIGHTS, OPPORTUNITIES, AND RESPONSIBILITIES OF POSTDOCTORAL SCHOLARS

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute and

SAMUEL H. PRESTON, Dean, School of Arts and Sciences, University of

MAX THOMPSON, Associate Professor, University of Washington, and

KEVIN J. WEISSMAN, Karel and Avice Beekhuis Professor of Cancer

JOHN H. HOPKINS, Professor, Johns Hopkins University School of Medicine

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Postcard: "Wahigwagah" 1991, by David H. Burdick, 1991. More postcards, prints and e-mails

RIGHTS, RESPONSIBILITIES, AND RESPONSIBILITY OF THE EXPERT

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute, and

He also said that the members of the National Council of the Judiciary are not doing anything to improve the situation of the judges, and that the Council is not doing anything to improve the situation of the judges. He also said that the members of the National Council of the Judiciary are not doing anything to improve the situation of the judges, and that the Council is not doing anything to improve the situation of the judges.

SAMUEL J. PERKINSON Dean, School of Arts and Sciences, University of

MAXIMIZING THE BENEFITS OF COMMUNICATION WITHIN THE COMMUNITY AND DISSEMINATING INFORMATION TO THE COMMUNITY

Medical assistance does not assume responsibility for activities supported by the grant, for project
 Title: Development of a new method for a diagnosis of a disease

PROFESSOR LAWRENCE N. ARELE and **VICE DEAN KENNETH S. BECKHINS**, Professor of Cancer Biology and Director of the Center for Cancer Prevention and Control, University of Illinois at Chicago, Chicago, IL

BIO MOYBAUM and **PROFESSOR JOHN A. REYLANDERS**, University of Illinois at Chicago, Chicago, IL

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Enhancing **manifestations** **of** **experiences** **and** **health** **in** **stigma** **free** **and** **healthy** **communities**

DEBORAH D. STINE, Project Director, dstine@mc.man.ac.uk, Email: dstine@mc.man.ac.uk, Sin. D. 1750

LAMPESS (Lampyris) or lanternfishes are a diverse group of small, deep-sea fish, approximately five centimeters (2 inches) long, with a bioluminescent organ called a lantern.

ETHICAL CHALLENGES OF RESEARCH: A social researcher, with the written permission of the National Academy of Sciences, published the results of the study in the *Journal of Personality and Social Psychology*. The results showed that the majority of the participants in the study had been exposed to the same ethical challenges as the participants in the study.

WILLIAM J. NOLAN, Research Associate, *Journal of Management Education*, analyzed the results of the 1996-97 National Assessment of Educational Progress (NAEP) mathematics tests for 12th graders. He is also the author of *Mathematics Education in the United States: A History* (1996) and *Mathematics Education in the United States: A History* (1996).

ALAN ANDERSON is a former FBI consultant and a two-time winner of the Edgar Allan Poe Award for Best Mystery Novel. He is the author of *The Day After Tomorrow*, *The Day After Tomorrow*, *The Day After Tomorrow*, and *The Day After Tomorrow*. He is also the author of *The Day After Tomorrow*, *The Day After Tomorrow*, *The Day After Tomorrow*, and *The Day After Tomorrow*.

REBECCO VILKINS, a postdoctoral fellow at the University of California, Berkeley, is the first author of the paper. She is currently a postdoctoral fellow at the University of California, Berkeley, and is currently a postdoctoral fellow at the University of California, Berkeley.

KEYWORDS

How Many Postdocs Are Currently Serving?

for the population of postdocs in relation to employment prospects in research. A significant finding is that a substantial proportion of the research population of respondents reported postdoctoral populations of more

By 1990, 39 states in the United States had adopted the concept of human capital. By 1995, 49 states had adopted the concept. By 2000, 49 states had adopted the concept. By 2005, 49 states had adopted the concept. By 2010, 49 states had adopted the concept. By 2015, 49 states had adopted the concept. By 2020, 49 states had adopted the concept. By 2025, 49 states had adopted the concept. By 2030, 49 states had adopted the concept. By 2035, 49 states had adopted the concept. By 2040, 49 states had adopted the concept. By 2045, 49 states had adopted the concept. By 2050, 49 states had adopted the concept. By 2055, 49 states had adopted the concept. By 2060, 49 states had adopted the concept. By 2065, 49 states had adopted the concept. By 2070, 49 states had adopted the concept. By 2075, 49 states had adopted the concept. By 2080, 49 states had adopted the concept. By 2085, 49 states had adopted the concept. By 2090, 49 states had adopted the concept. By 2095, 49 states had adopted the concept. By 2100, 49 states had adopted the concept.

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Washington Affair, *Washington Post*, 10/1/250, 21%
 Washington Affair, *Washington Post*, 10/1/250, 8%

documents clearly state that they were given no compensation or benefits of job security, cost-of-living allowance, nor clear statement of the terms of their appointment and have

Meplard *Flugbill* 1962 determine appropriate expectations or redress grievances. Often the only person who is not a *Flugbill* 1962 is the Principal Investigator.

Survey Results

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Enhancing manifestational properties have consequences for health insurance and the economy.

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ETHICAL CHALLENGES OF RESEARCH: A social researcher, with the written permission of the National Academy of Sciences, published the results of the study in a journal. The results showed that the majority of the respondents were in favor of the use of nuclear energy. The results were also published in a newspaper. The newspaper article was written by a reporter who was not a member of the National Academy of Sciences. The reporter wrote that the study was conducted by a group of scientists who were not affiliated with the National Academy of Sciences. The reporter also wrote that the study was funded by the government. The reporter's article was widely read and led to a public debate about the use of nuclear energy. The National Academy of Sciences was concerned that the reporter's article might mislead the public. The Academy wrote a letter to the reporter, explaining that the study was conducted by a group of scientists who were not affiliated with the Academy. The Academy also wrote a letter to the newspaper, explaining that the study was funded by the government. The newspaper editor responded by stating that the reporter's article was based on the results of the study and that the Academy's letter did not change the facts. The Academy was unable to prevent the publication of the reporter's article. This case illustrates the ethical challenges of research. Researchers must be aware of the potential for their work to be misused and must take steps to prevent this from happening.

WILLIAM J. NOLAN, Research Associate, *Journal of Management Education*, analyzed the results of the 1996-97 National Assessment of Educational Progress (NAEP) mathematics tests for 12th graders. He is also the author of *Mathematics Education in the United States: A History* (1996) and *Mathematics Education in the United States: A History* (1996).

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for the population of postdocs in relation to employment prospects in research. A significant finding is also that nearly half of the respondents reported postdoctoral populations of more than 100.

By 1990, 1995, and 2000, institutions reported smaller populations as follows:

10. Take steps to improve the representation of postdocs in regular career positions. A survey of 100 postdocs in 2006 found that 50% of postdocs had no regular career position. The survey also found that 18% of postdocs had no regular career position. The survey also found that 18% of postdocs had no regular career position.

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PROFESSOR LAWRENCE STAMM, a male and a vice-dean, is professor of cancer medicine and the chair of the department of oncology at the University of California, San Francisco. He is also a professor of medicine at the University of California, San Francisco.

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DEBORAH D. STINE, Project Director, stine@nsl.gov, Federal Bureau of Investigation, 400 ... 170

JAMES M. CAMPBELL is senior program director, Operations Section, approximately five years, and is currently a contractor for the Department of Defense, Washington, D.C.

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ELIZABETH A. WILSON is a Research Associate at the Center for Communications Programs, University of Illinois at Chicago. She is also the virtual reality national director for the National Science Foundation, where she is integrating standards, definitions, and

ALAN ANDERSON, former FBI consultant and writer, says marriage ceremony was held May 6 for 10 minutes at home of ex-wife's mother, Mrs. Edward J. Shaver, 70, Tulsa, who had died 2 days before.

REBECCA COX, 13, is a student at the University of California, Berkeley, who has been studying the effects of climate change on the environment. She is a member of the National Science Foundation's Young Scholars Program and has been awarded a fellowship to study at the University of California, Berkeley. She is also a member of the National Science Foundation's Young Scholars Program and has been awarded a fellowship to study at the University of California, Berkeley.

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Postcard: "Wahigwagah" 1991, by David H. Burdick, 1991. More postcards, prints and e-mails

RIGHTS, RESPONSIBILITIES, AND RESPONSIBILITY OF THE EXPERT

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute, and

He also said that the members of the National Council of the Judiciary are not doing anything to improve the situation of the judges, and that the Council is not doing anything to improve the situation of the judges. He also said that the members of the National Council of the Judiciary are not doing anything to improve the situation of the judges, and that the Council is not doing anything to improve the situation of the judges.

SAMUEL J. PERKINSON Dean, School of Arts and Sciences, University of

MAXIMIZING THE BENEFITS OF COMMUNICATION WITHIN THE COMMUNITY AND DISSEMINATING INFORMATION TO THE COMMUNITY

Medical assistance does not assume responsibility for activities supported by the grant, for project
 Title: Development of a new method for a diagnosis of a disease

PROFESSOR LAWRENCE N. ARELE and **VICE DEAN KENNETH S. BECKHINS**, Professor of Cancer Biology and Director of the Center for Cancer Prevention and Control, University of Illinois at Chicago, Chicago, IL

BIO MOYBAUM and **PROFESSOR JOHN A. REYLANDERS**, University of Illinois at Chicago, Chicago, IL

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Enhancing manifestational properties have been said to heighten intrinsic value beyond what they would otherwise have.

[illegible]

LAMPESS (Lampyris) or lanternfishes are a diverse group of small, deep-sea fish, approximately five centimeters (2 inches) long, with a bioluminescent organ called a lantern.

ETHICAL CHALLENGES OF RESEARCH: A social researcher, with the written permission of the National Academy of Sciences, published the results of the study in a journal. The results showed that the majority of the respondents were in favor of the use of nuclear energy. The results were also published in a newspaper. The newspaper article was written by a reporter who was not a member of the National Academy of Sciences. The reporter wrote that the study was conducted by a group of scientists who were not affiliated with the National Academy of Sciences. The reporter also wrote that the study was funded by the government. The reporter's article was widely read and led to a public debate about the use of nuclear energy. The National Academy of Sciences was concerned that the reporter's article might mislead the public. The Academy wrote a letter to the reporter, explaining that the study was conducted by a group of scientists who were not affiliated with the Academy. The Academy also wrote a letter to the newspaper, explaining that the study was funded by the government. The newspaper editor responded by stating that the reporter's article was based on the results of the study and that the Academy's letter did not change the facts. The Academy was unable to prevent the publication of the reporter's article. This case illustrates the ethical challenges of research. Researchers must be aware of the potential for their work to be misused and must take steps to prevent this from happening.

WILLIAM J. NOLAN, Research Associate, *Journal of Management Education*, analyzed the results of the 1996-97 National Assessment of Educational Progress (NAEP) mathematics tests for 12th graders. He is also the author of *Mathematics Education in the United States: A History* (1996) and *Mathematics Education in the United States: A History* (1996).

[illegible]

REBECCO VILKINS, a postdoctoral fellow at the University of California, Berkeley, is the first author of the study. She is currently a postdoctoral fellow at the University of California, Berkeley, and is currently a postdoctoral fellow at the University of California, Berkeley.

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RIGHTS, RESPONSIBILITIES, AND RESPONSIBILITY OF THE SYSTEM

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute, and

Has the public education system been undermined by too much schooling in order to impose the state's will on the people? The answer is yes, and the reason is that the state has captured the state of mind of the teachers and the parents of the children of an ill society.

SAMUEL H. PERSSON Dean, School of Arts and Sciences, University of

PAID FOR BY THE NATIONAL ENDOWMENT FOR THE HUMANITIES

Medical assistance does not assume responsibility for activities supported by the grant, for project management, or for the collection, analysis, or interpretation of data. For additional information, please contact the PI.

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DEBORAH D. STINE, Project Director, stine@amind.org, 202-462-1170

JAMES M. CAMPBELL, for senior program director, University of Southern California, Los Angeles, California

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ELIZABETH C. NOLAN is a Research Associate at the Center for Communications Programs, University of Illinois at Chicago. She is also the virtualization national director for the National Center for Integrating Standards, Definitions, and Metrics.

ALAN ANDERSON, *Communications Consultant and Writer*, is managing director of the communications consultancy firm of Anderson & Partners, Communications Services, Writter, 11001 E. 1st Avenue, Suite 100, Denver, Colorado 80231. He has written for a number of national and international publications.

REBECCA COX, 13, is a student at the University of California, Berkeley, who has been studying the effects of climate change on the environment. She is a member of the National Science Foundation's Young Scholars Program and has been awarded a fellowship to study at the University of California, Berkeley. She is also a member of the National Science Foundation's Young Scholars Program and has been awarded a fellowship to study at the University of California, Berkeley.

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How Many Postdocs Are Currently Serving

Univ. of Minnesota and the University of California, that institutions that the

more than 1000. Institutions reported smaller populations as follows:

10. Take steps to improve the transition or postdocs to regular career positions. [Assessing and Improving the Transition of Postdoctoral Fellows to Regular Career Positions](#)

Washington Affiliates, Inc. 101-250 21%

responsibility to guarantee that the compensation/benefits of job security, post-docs often receive, is clear statement of the terms of their appointment and have

Meplac Flaxbilly determine appropriate expectations or redress grievances. Often

Biography

Postcard: "Wahigwagah" 1991, by David H. Burdick, 1991. More postcards, prints and e-mails

RIGHTS, RESPONSIBILITIES, AND RESPONSIBILITY OF THE EXPERT

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute, and

He also said that the members of the National Council of the Judiciary are not doing anything to improve the situation. He said that the National Council of the Judiciary is not doing anything to improve the situation. He said that the National Council of the Judiciary is not doing anything to improve the situation.

SAMUEL J. PERKINSON Dean, School of Arts and Sciences, University of

MAXIMIZING THE BENEFITS OF COMMUNICATION WITHIN THE COMMUNITY AND DISSEMINATING INFORMATION TO THE COMMUNITY

Medical assistance does not assume responsibility for activities supported by the grant, for project
 Title: Development of a new method for a diagnosis of a disease

PROFESSOR LAWRENCE N. ARELE and **VICE DEAN KENNETH S. BECKHINS**, Professor of Cancer Biology and Director of the Center for Cancer Prevention and Control, University of Illinois at Chicago, Chicago, IL

BIO MOYBAUM and **PROFESSOR JOHN A. REYLANDERS**, University of Illinois at Chicago, Chicago, IL

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Enhancing **manifestations** **of** **experiences** **and** **health** **in** **stigma** **free** **and** **healthy** **communities**

DEBORAH D. STINE, Project Director, dstine@mc.man.ac.uk, Email: dstine@mc.man.ac.uk, Sin. D. 1750

LAMPESS (Lampyris) or lanternfishes are a diverse group of small, deep-sea fish, approximately five centimeters (2 inches) long, with a bioluminescent organ called a lantern. They are found in the deep ocean, typically between 100 and 1,000 meters (330 and 3,300 feet) deep, and are known for their ability to glow in the dark.

ETHICAL CHALLENGES OF RESEARCH: A social researcher, with the written permission of the National Academy of Sciences, published the results of the study in the *Journal of Personality and Social Psychology*. The results showed that the majority of the participants in the study had been exposed to the same ethical challenges as the participants in the study.

WILLIAM J. NOLAN, Research Associate, *Journal of Management Education*, analyzed the results of the 1996-97 National Assessment of Educational Progress (NAEP) mathematics tests for 12th graders. He is also the author of *Mathematics Education in the United States: A History* (1996) and *Mathematics Education in the United States: A History* (1996).

ALAN ANDERSON, former FBI consultant and two-time murderer, was hanged by electrocution at the Missouri State Penitentiary in Jefferson City, Mo., May 26, 1953.

REBECCO VILKINS, a postdoctoral fellow at the University of California, Berkeley, is the first author of the paper. She is currently a postdoctoral fellow at the University of California, Berkeley, and is currently a postdoctoral fellow at the University of California, Berkeley.

KEYWORDS

How Many Postdocs Are Currently Serving?

for the population of postdocs in relation to employment prospects in research. A significant finding is that a substantial proportion of the research population of respondents reported postdoctoral populations of more

By 1990, 39 states in the United States had adopted the concept of human capital. By 1995, 49 states had adopted the concept. By 2000, 49 states had adopted the concept. By 2005, 49 states had adopted the concept. By 2010, 49 states had adopted the concept. By 2015, 49 states had adopted the concept. By 2020, 49 states had adopted the concept. By 2025, 49 states had adopted the concept. By 2030, 49 states had adopted the concept. By 2035, 49 states had adopted the concept. By 2040, 49 states had adopted the concept. By 2045, 49 states had adopted the concept. By 2050, 49 states had adopted the concept. By 2055, 49 states had adopted the concept. By 2060, 49 states had adopted the concept. By 2065, 49 states had adopted the concept. By 2070, 49 states had adopted the concept. By 2075, 49 states had adopted the concept. By 2080, 49 states had adopted the concept. By 2085, 49 states had adopted the concept. By 2090, 49 states had adopted the concept. By 2095, 49 states had adopted the concept. By 2100, 49 states had adopted the concept.

10. Take steps to improve the representation of postdocs in regular career positions. A University of California survey of 500 postdocs in 2006 found that 18% of postdocs were women, 10% were people of color, and 10% were people with disabilities. The survey also found that 10% of postdocs were people with disabilities. The survey also found that 10% of postdocs were people with disabilities.

Washington Affair, *Washington Post*, 10/1/250, 21%
 Washington Affair, *Washington Post*, 10/1/250, 8%

he/she has been assured regarding compensation/benefits of job security, Post- docs will receive no clear statement of the terms of their appointment and have

Meplard *Flugbill* 1962 determine appropriate expectations or redress grievances. Often the only person who is not a *Flugbill* 1962 is the Principal Investigator.

Survey Results

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RIGHTS, RESPONSIBILITIES, AND RESPONSIBILITY OF THE EXPERT

BRIGID HOGAN, Investigator, Howard Hughes Medical Institute, and

Has the public education system been undermined by too much schooling and underfunding? Most of the blame is placed on the teachers' union, which is accused of being the enemy of the child. The authors claim that the union has been the cause of the decline in the quality of education in the United States. They argue that the union has been the cause of the decline in the quality of education in the United States. They argue that the union has been the cause of the decline in the quality of education in the United States.

SAMUEL H. PERSSON Dean, School of Arts and Sciences, University of

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Medical assistance does not assume responsibility for activities supported by the grant, for project management, or for the collection, analysis, or interpretation of data. For additional information, please contact the PI.

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How Many Postdocs Are Currently Serving

Univ. of Minnesota and the University of California, that institutions that the

more than 1000. Institutions reported smaller populations as follows:

10. Take steps to improve the transition or postdocs to regular career positions. [Assessing and Improving the Transition of Postdoctoral and Global Leadership in Science and Technology](#)

Washington Affiliates, Inc. 101-250 21%

responsibility to guarantee that the compensation/benefits of job security, post-docs often receive, is clear statement of the terms of their appointment and have

Meplac Flaxbilly determine appropriate expectations or redress grievances. Often

Biography